What is claimed is:

1. A rotary electric machine including a stator core, an armature winding mounted in said stator core, wherein

said armature winding comprises a plurality of three-phase windings, one of which is a Δ-connection winding having output ends that are connected in series with respective phase-winding of another three-phase winding.

2. The rotary electric machine as claimed in claim 1, wherein

said plurality of three-phase windings is mounted in said stator core so that the phase of current flowing in one phase winding is $\pi/6$ radian in electric angle different from the phase of current flowing in another phase-winding.

3. The rotary electric machine as claimed in claim 1, wherein

each of said plurality of phase-windings has approximately the same number of turns.

4. The rotary electric machine as claimed in claim 1, wherein said armature winding comprises a plurality of electric conductors welded together.

5. The rotary electric machine as claimed in claim 4, wherein each of said electric conductor has a rectangular

cross-section.

6. The rotary electric machine as claimed in claim 1, wherein

said output ends of said Δ-connection winding are distributed at an end surface of said stator core in an angular range that is more than 180 degree.

7. The rotary electric machine as claimed in claim 6, further comprising lead wires that form output ends of said plurality of three-phase windings, wherein

said lead wires are extended in radial directions so that they do not overlap one another.

8. The rotary electric machine as claimed in claim 1, further comprising a rectifier unit for rectifying voltages induced in said armature winding, wherein the other output ends of said another three-phase winding that are not connected to said Δ-connection winding are connected to said rectifier unit.

9. A rotary electric machine comprising:

a stator including a stator core and a three-phase armature winding mounted in the stator core;

a rotor having a plurality of magnetic poles; and

a rectifier unit; wherein

said armature winding comprises three first phase-

windings that form a Δ-connection winding having output ends and three second phase-windings that are respectively connected in series to said output ends to form a star-connection three-phase winding having output ends connected to said rectifier unit.

10. The rotary electric machine as claimed in claim 9, wherein

said first and second phase-windings are mounted in said stator core so that the phase of current flowing in said first phase-windings is $\pi/6$ radian in electric angle different from the phase of current flowing in said second phase windings.

11. The rotary electric machine as claimed in claim 9, wherein

each of said first and second phase-windings has the same number of turns.

12. The rotary electric machine as claimed in claim 9, wherein each of said first and second phase-windings comprises a plurality of U-shaped conductor segments.

13. The rotary electric machine as claimed in claim 12, wherein each of said U-shaped conductor segments has a rectangular cross-section.